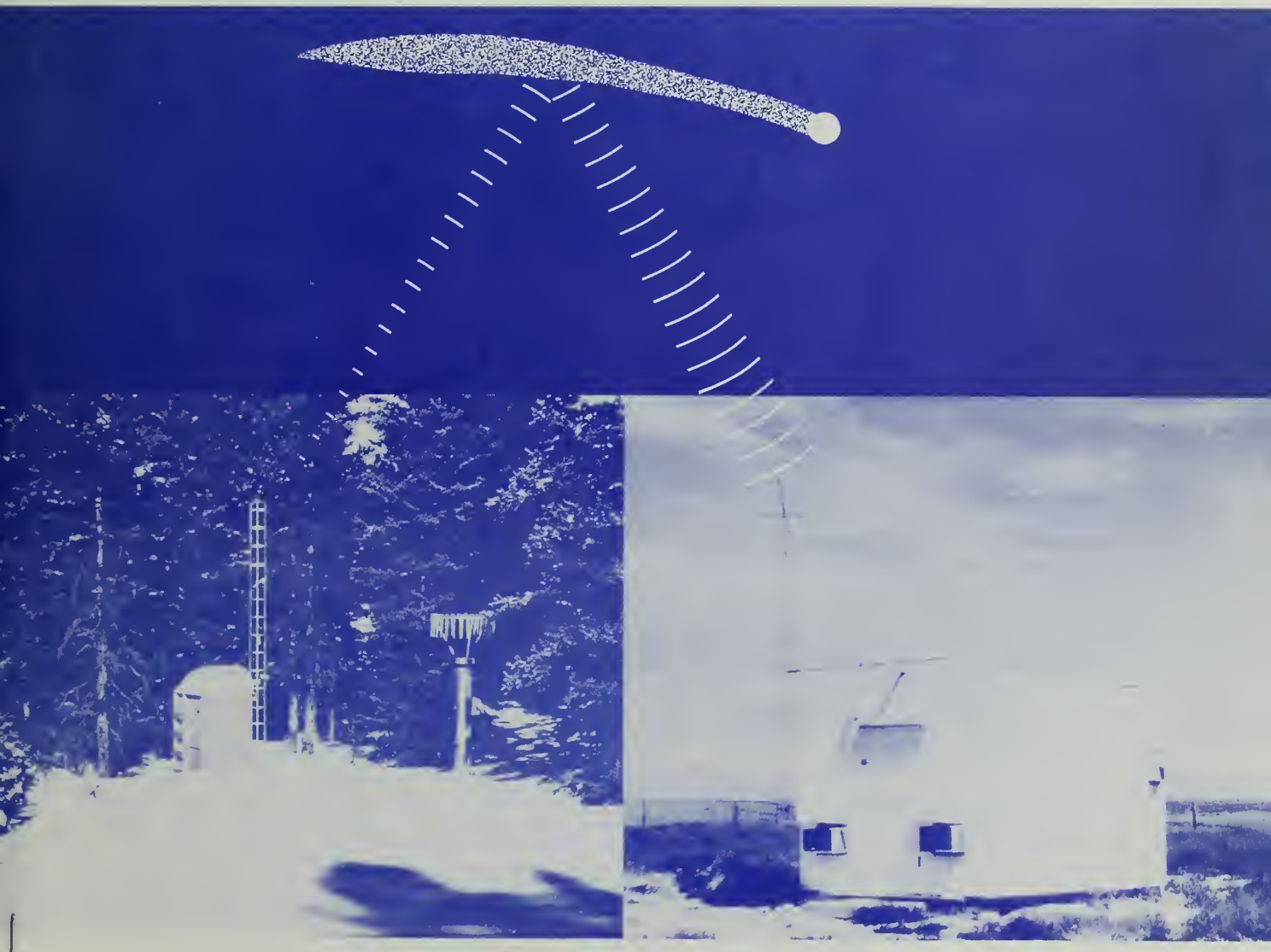
WATER SUPPLY OUTLOOK FOR NEVADA



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

NEVADA DEPARTMENT of CONSERVATION
and NATURAL RESOURCES
DIVISION of WATER RESOURCES

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF
JAN. 1, 1978

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SOME OF THE DATA IN THIS REPORT HAVE BEEN RECEIVED THROUGH THE SOIL CONSERVATION SERVICE'S NEW SNOTEL SYSTEM WHICH TRANSMITS INFORMATION VIA THE SPACE AGED METEOR BURST METHOD FROM DATA SITES TO MASTER STATIONS LIKE THESE.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P.O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1220 S.W. Third Ave., Portland, Oregon 97204
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.

USDA-SCS-PORTLAND, OR 1977

WATER SUPPLY OUTLOOK FOR NEVADA

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

R. M. DAVIS
ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D C

Released by

GERALD THOLA
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
RENO, NEVADA

In Cooperation with

NORMAN S. HALL
DIRECTOR
DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES
CARSON CITY, NEVADA

Report prepared by

RONALD E. MORELAND, Snow Survey Supervisor
and
JAMES K. MARRON, Assistant Snow Survey Supervisor
SOIL CONSERVATION SERVICE
P. O. BOX 4850
RENO, NEVADA

WATER SUPPLY OUTLOOK FOR NEVADA

SNOW SURVEYS TAKEN AT THE END OF DECEMBER INDICATE AN ABOVE AVERAGE SNOWPACK IN THE SIERRA'S AND SNAKE RIVER AND BELOW AVERAGE SNOWPACK IN THE HUMBOLDT DRAINAGE.

RESERVOIR STORAGE IN THE SIERRA'S AND MOST AREAS OF NEVADA IS POOR. STORAGE IN THE TAHOE-TRUCKEE DRAINAGES IS THE LOWEST SINCE 1961.

DROUGHT CONDITIONS WILL REMAIN WITH US DUE TO DEPLETED WATER STORAGE AND A SNOWPACK ONLY SLIGHTLY ABOVE AVERAGE.

Sierra snowpacks are above average with 114 per cent. January 1 is about normal for the first time in four years. Snowpack conditions are due to wet snows and light rains in the Sierra during December and early January which increased the water content of the snowpack substantially.

Reservoir storage in the Sierra's is very poor with only four per cent of normal. Lake Tahoe, Boca and Prosser have three per cent of normal or 13,000 acre-feet as compared to a normal of 414,000 acre-feet.

Topaz and Bridgeport reservoirs have a 13 per cent of normal with 6,300 acre-feet as compared to a normal of 52,000 acre-feet.

Lahontan contains 45,000 acre-feet compared to a normal of 158,000 acre-feet.

The snow pack in the Snake and Owyhee drainages is about average. The Snake River has 111 per cent while the Owyhee is 94 per cent of average.

Snowpack in the Humboldt River is well below average with 56 per cent. If this pattern continues, the water supply will be well below average with water conservation practices essential again this year.

Reservoir storage in Rye Patch is lower than last year at 40 per cent and 50 per cent of average.

Reservoir storage in the Southern part of the state is about average with Lake Mohave at 102 per cent of normal and Lake Mead at 116 per cent of normal.

SNOW COURSE MEASUREMENTS

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average +
LAKE TAHOE-TRUCKEE RIVER						
Echo Peak	7800	12/31/77	57	22.5	0.0	-
Echo Summit	7450	12/27/77	42	11.8	-	-
Fallen Leaf	6240	12/27/77	9	2.5	0.0	-
Freel Bench	7300	12/31/77	15	5.4	0.0	6.3*
Glenbrook #2	6900	12/29/77	19	5.6	0.0	4.3*
Hagans Meadow	8000	12/31/77	31	10.3	0.0	8.3*
Heavenly Valley	8800	12/31/77	48	15.8	0.0	-
Independence Camp	7000	12/27/77	27	7.1	0.0	9.2*
Independence Creek	6500	12/27/77	15	4.1	0.0	-
Independencd Lake	8450	12/31/77	61	18.3	0.5	-
Marlette Lake	8000	12/31/77	46	13.0	0.0	9.6*
Mount Rose	9000	12/31/77	51	16.4	0.4	-
Mount Rose Ski Area	8850	12/28/77	77	21.2	1.0	-
Richardsons #2	6500	12/28/77	24	7.6	0.1	-
Squaw Valley #2	7500	12/31/77	70	24.0	1.4	-
Tahoe City	6250	NS			0.0	-
Tahoe City Alternate	6250	NS			0.0	-
Tahoe City Cross	6750	12/28/77	23	7.7	0.0	-
Upper Truckee	6400	12/31/77	10	3.7	0.0	5.0*
Ward Creek #2	7000	12/28/77	66	21.0	0.0	15.0*
Ward Creek #3	6750	12/28/77	39	14.1	0.0	-
CARSON-WALKER RIVERS						
Ebbetts Pass #2	8700	12/31/77	57	20.0	0.3	-
Lobdell Lake	9200	12/30/77	32	8.8a	0.0	-
Poison Flat #2	7900	12/31/77	35	10.6	0.0	-
Sawmill Ridge	8750	NS			0.0	-
Sonora Pass	8800	12/29/77	46	13.2	0.0	9.5*
Virginia Lakes	9500	12/29/77	42	12.4	0.0	6.9*
Virginia Lakes Ridge	9200	12/29/77	46	12.2	0.0	-
Wet Meadows Lake #2	8050	12/31/77	50	16.2	0.8	-
Wolk Creek AM	8000	12/31/77	46	15.0	-	-
SNAKE RIVER						
Bear Creek AM	7800	1/3/78	34	10.2	-	7.8*
Goat Creek	8800	12/28/77	23	6.7	-	6.4*
Hummingbird Springs AM	8945	1/3/78	35	9.5	-	7.6*
Merritt Mountain AM	7000	12/26/77	24	4.1a	0.0	-
Pole Creek Ranger Station	8330	12/28/77	23	6.4	0.0	7.7*
Red Point AM	7940	NS			-	4.4
76 Creek AM	7100	12/26/77	22	4.6a	0.0	6.2*
Stag Mountain AM	7700	12/26/77	13	2.2a	0.0	-

+ 1958-1972 period.

SNOW COURSE MEASUREMENTS

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR: Date of Survey	THIS YEAR: Snow Depth (Inches)	THIS YEAR: Water Content (Inches)	PAST RECORD: Water Content (inches) Last Year	PAST RECORD: Water Content (inches) Average +
OWYHEE RIVER						
Columbia Basin AM	6650	12/26/77	9	2.2a	0.0	-
Fawn Creek AM	7000	12/29/77	12	2.9a	0.0	-
Jack Creek, Upper AM	7250	12/26/77	9	2.2a	0.0	-
Taylor Canyon	6200	12/30/77	9	1.7	0.0	1.8
UPPER AND LOWER HUMBOLDT RIVER						
American Beauty AM	7800	12/26/77	17	4.1a	0.0	-
Corral Canyon AM	8500	12/26/77	15	3.2a	0.0	-
Fry Canyon	6700	12/29/77	8	1.3	0.0	3.0
Midas AM	7200	12/26/77	11	2.1a	0.0	-
Robinson Lake AM	9200	12/26/77	35	8.3a	0.0	-
Rodeo Flat	6800	12/29/77	6	1.5	0.0	2.6
Tent Mountain AM	7000	12/26/77	4	0.7a	0.0	-
Tent Mountain AM	8350	12/26/77	11	2.3a	0.0	-
Toe Jam AM	7700	12/26/77	12	2.3a	0.0	-
Tremewan Ranch	5700	12/29/77	5	0.8	0.0	0.8
Trout Creek, Upper AM	6900	12/26/77	30	6.3a	0.0	-
SURPRISE VALLEY						
Cedar Pass	7100	12/30/77	19	4.9	0.0	-

NS No Survey

NOTE:
*All averages based an 1958–72, 15 year period. Farecast period is April 1 through July 31 unless otherwise nated. a–Aerial marker; water content estimated. * 1958–72 adjusted average.*

+ 1958-1972 period

RESERVOIR STORAGE (Thousand Acre Feet) AS OF January 1, 1978

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average+
Owyhee	Wild Horse	72	Delayed	44	16
Lower Humboldt	Rye Patch	157	41	101	82
Colorado	Mohave	1,810	1,643	1,716	1,612
Colorado	Mead	26,159	20,250	21,258	17,429
Tahoe	Tahoe	732	0	187	394
Truckee	Boca	41	11	24	12
Truckee	Stampede	220	32	45	*
Truckee	Prosser***	30	2	9	8**
Carson	Lahontan	291	45	124	158
West Walker	Topaz	59	1.1	8	28
East Walker	Bridgeport	42	5.2	9	24

* *Adjusted average.*
** *Storage began August 1, 1969.*
*** *Flood Control use allocation of 20,000 acre-feet between November 1 and April 10.*

TOTAL RESERVOIR STORAGE (Thousand Acre Feet)

MONTH	This Year	Last Year	Average +
October 1	97	574	718
January 1	143	488	714
February 1		509	782
March 1		545	843
April 1		550	893
May 1		510	934

The above data developed from Wild Horse, Rye Patch, Tahoe, Boca, Lahontan, Topaz, and Bridgeport Reservoirs in 1,000 Acre-feet.
TOTAL USABLE CAPACITY

PEAK FLOWS (MAXIMUM MEAN DAILY) (Av. flow for 24 hrs. on day of greatest flow)

FORECAST POINT	PEAK FLOW (SECOND FEET)	
	Forecast Range	Average +
No forecast issued January 1		

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
No forecast issued January 1			

+ 1958-1972 period.

PRECIPITATION (Inches)

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX OCT 1 TO DATE		
		Date of Reading	Month's Precipitation	Last Year	This Year	Last Year	Percent of Average
LAKE TAHOE - TRUCKEE							
Echo Peak	7800	12/31/77	-	-	19.9	4.6	-
Fallen Leaf	6240	12/27/77	-	-	13.5	1.7	-
Hagans Meadow	8000	12/31/77	-	-	13.2	3.0	-
Heavenly Valley	8800	12/31/77	-	-	13.7	-	-
Independence Camp	7000	12/27/77	-	-	11.8	2.3	-
Independence Creek	6500	12/27/77	-	-	12.1	3.4	-
Independence Lake	8450	12/31/77	-	-	12.1	7.2	-
Marlette Lake	8000	12/31/77	-	-	15.1	3.5	-
Mount Rose	9000	12/31/77	-	-	10.5	1.2	-
Tahoe City Cross	6750	12/28/77	-	-	10.0	4.1	-
Truckee #2	6400	NS	-	-			
Ward Creek #3	6750	12/28/77	-	-	22.4	7.1	-
CARSON RIVER							
Ebbetts Pass	8750	12/31/77	-	-	15.7	4.2	-
Poison Flat	7900	12/31/77	-	-	11.1	-	-
Wet Meadows	8050	12/31/77	-	-	11.1	4.0	-
WALKER RIVER							
Lobdell Lake	9200	NS				.4*	
Sonora Pass	8800	12/29/77	-	-	13.1	5.2	-
Virginia Lakes Ridge	9200	12/29/77	-	-	12.7	4.3	-
HUMBOLDT RIVER							
Rodeo Flat	6800	12/29/77	-	-	4.9	3.8	80
Taylor Canyon	6200	12/30/77	-	-	3.6	3.9	78
SURPRISE VALLEY							
Cedar Pass	7100	12/30/77	-	-	11.0	-	-

NS No Survey
*Since 11/4/76

Agencies Cooperating in Collecting Data Contained in this Bulletin

FEDERAL
- Agriculturol Research Service
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Geological Survey
- Novy
- Soil Conservation Service
- U. S. District Court - Federal Water Master
- NOAA, National Weather Service

STATE
- California Cooperative Snow Surveys
- California Department of Parks and Recreation
- California Department of Water Resources
- Colorado River Commission of Nevada
- Idaho Cooperative Snow Surveys
- Nevada Association of Conservation Districts
- Nevada Department of Conservation & Notural Resources
  - Division of Woter Resources
  - Nevoda State Forester
- Oregon Cooperative Snow Surveys
- Utah Cooperative Snow Surveys
- White Mountain Research Station, Univ. of California

PRIVATE
- Amalgamated Sugar Company
- Kennecott Copper Corporation
- Nevada Irrigation District
- Owyhee Project North Board of Control
- Owyhee Project South Board of Control
- Pacific Gas and Electric Company
- Pershing County Water Conservation District
- Sierra Pacific Power Company
- Truckee-Carson Irrigation District
- Walker River Irrigation District
- Washoe County Water Conservoncy District

Other organizations and individuals furnish voluoble information for the snow survey reports. Their Cooperotion is grotefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P.O. Box 4850
RENO, NEVADA 89505

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U. S. DEPARTMENT OF
AGRICULTURE
AGR-101

U.S.MAIL

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE

COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro-electric power generation, navigation, mining and industry

"The Conservation of Water begins with the Snow Survey"